

# GOING GREEN

FREE

The Valley guide to an eco-friendly lifestyle

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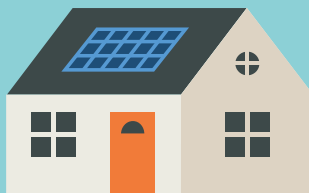
## Building without toxins



*Hitchcock Center  
shows how it's done Page 3*



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## COVER STORY

# Building without toxins

Hitchcock Center serves as a powerful teaching tool for the rest of us

By Maureen Turner  
For Going Green

Signs of the Hitchcock Center for the Environment's commitment to sustainability are evident all around its South Amherst site: the large solar array on its roof, the rain barrels at the bottom of downspouts, the station for refilling water bottles in a hallway, the composting toilets in the restrooms.

But many of the green measures the center took in constructing its new home, which opened in 2016, are not immediately visible to the eye. At a recent event, "Building



PHOTO/JESSICA SCHULTZ

The pollinator garden at the Hitchcock Center for the Environment in Amherst. The Teaching Gardens at Hitchcock promote hands-on connections to the green and growing world for all.

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PHOTO/JESSICA SCHULTZ

Classrooms are invited to visit the Hitchcock Center, as well as other distinct natural areas of the Pioneer Valley through a variety of hands-on, inquiry-based field trips. The Hitchcock Center can accommodate 2 classroom field trips at a time. A complete listing of field trip programs is available at [hitchcockcenter.org](http://hitchcockcenter.org).

## Hitchcock

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without Toxins: Educating for a Healthy Material World,” the non-profit organization highlighted some of those less immediately obvious measures, the result of thoughtful, even painstaking decisions made at every step of the construction process. Those decisions were necessitated by the Hitchcock Center’s decision to take the Living Building Challenge. The LBC, a project of the International Living Future Institute, or ILFI, calls on builders to meet a long list of exacting standards, including net zero energy and water consumption, habitat conservation on the building site, and the use of non-toxic, locally sourced building materials. (Learn more at [www.living-future.org](http://www.living-future.org).)

The “Building without Toxins” event featured a panel of experts in the field, including representatives from Wright Builders, which constructed the new Hitchcock Center building as well as another LBC project at Hampshire College. Taking the Living Building Challenge “has been a truly transformative project

for all of us” at Hitchcock, said Julie Johnson, the center’s executive director, who moderated the panel discussion. The project, she noted, provided an education for Hitchcock staff and an opportunity for the organization to share with others what they learned, with the building itself serving as a powerful teaching tool.

Much of the panel discussion focused on ILFI’s “Red List,” which names the most harmful materials commonly used in construction. The list includes lead, mercury, asbestos, flame retardants, polychlorinated biphenyls (PCBs), polyvinyl chloride (PVC), and other chemicals that pose risks to people and the environment. LBC projects

must avoid the use of Red List materials.

The LBC “flips the design process on its head,” said panelist Kath McCusker, a sustainability analyst who worked with Williams College on an LBC project. The challenge calls on participants to consider the environmental and public health implications of materials from start to finish: its extraction as a raw material; its effects on the workers who manufacture it, who install it, and

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## Heat Your Home or Business with an Eco-Friendly, Cost-Saving Wood Pellet System

With generous rebates and loan programs available, as well as having the warmth and comfort of heating your home or business with renewable and sustainable fuel, now is the perfect time to install a wood pellet boiler or furnace.

Sandri Energy of Greenfield sells highly efficient pellet central heating boilers and furnaces by OcoFEN and furnaces by MESYS, leading manufacturers in the industry.

There are terrific incentives available to make installing a pellet heating system affordable for just about any budget. For qualified buyers, the state is offering outstanding MassCEC rebates of \$12,000-\$16,500 for installing a pellet burning system, as well as a Mass Save loan program of up to \$25,000 with 0% interest for seven years.

Like solar heating systems, future incentives may include a 30% tax credit for installing a pellet central heating system and thermal renewable energy credits.

“Both programs help drive costs down,” said Thom Burden, Sandri Energy’s renewable energy expert. “They will likely happen by the end of this year. It will make systems more affordable and more competitive to oil and gas. There are also programs moving toward low-income households in Massachusetts and Vermont to help them take advantage of this technology.”

Buying and installing a new pellet boiler or furnace can be completed for as low as \$200 or less a month. Pellet system customers can save up to 50% annually on heating bills over oil and gas.

For the convenience of customers, Sandri Energy will even fill out and submit the loan or rebate application.

“The system will heat the whole house,” Thom said. “The big benefit of pellets is that it decreases your carbon footprint. It’s a renewable and stable fuel.”

The pellet systems sold by Sandri are also highly efficient, as they are self-cleaning, and fully automated and self-feeding.

For pellet stove users, Sandri also installs 2-4 ton bins to store wood pellets in a garage, basement or other accessible space. The pellets are delivered to your home and loaded into the bin by a Sandri delivery truck driver, so you don’t have to handle the pellets. And the price of bulk pellets is stable and costs the same or less than bagged pellets.

“When the boiler or furnace is running low, it automatically takes pellets from the bin as needed,” Thom said. “These are very well controlled systems. The control of the combustion of pellets is more complex than with a pellet stove. You get more heat from the pellets and less emissions. The emissions are minimal compared to oil.”

A pellet furnace relies on a home’s ductwork to distribute the heated air via a distribution fan. A pellet boiler is a hydronic system that heats water that is distributed throughout the home via in-floor heating systems, wall radiators, etc. A pellet boiler can also be integrated into an existing force-air furnace system through the use of a water-to-air heat exchanger placed inside the plenum/duct. Pellet-fueled boilers can also assist supplying your domestic hot water needs.

To further reduce the system’s carbon footprint, pellets are purchased by Sandri locally from New England Wood Pellet in Jaffrey, New Hampshire. If there is an issue with the system, most problems can be solved by simply going on the Sandri Energy website, which is convenient, and saves time and money.

Sandri Energy has been installing pellet heating systems for eight years in more than 200 households and at many businesses, and the company has seen the demand increase every year.

“It’s a very quiet technology and we’d like people to get into it,” Thom said. “This is a good, solid technology.”

For more information about the purchase and installation of a highly efficient, environmentally-friendly, and cost saving pellet heating system, check out [www.sandri.com](http://www.sandri.com) or call Thom at 413-772-2121 or 800-628-1900.



For more information on the Sandri Company’s wide range of energy efficient heating and cooling systems, call (800) 628-1900 or visit [www.sandri.com](http://www.sandri.com).

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who are employed in the building once it's complete; the ability to recycle waste materials generated during processing and construction. Some materials that sound good at first raise issues on closer inspection; for instance, noted Jonathan Wright, principal at Wright Builders, while most of the steel used in construction in the U.S. is recycled, that recycling process releases large amounts of carbon and other gases into the air. The Hitchcock Center instead used for its structure responsibly forested wood, which produces oxygen, encapsulates carbon, and has a carbon footprint that's a fraction of steel's.

After the panel discussion, Jessica Schultz, Hitchcock's Living Building coordinator, led a tour of the facility, pointing out some of the other green materials used in the project: formaldehyde-free adhesives, insulation made from recycled materials, VOC (volatile organic compound)-free paint, wood finishes made with whey protein rather than toxic chemicals. In the basement, she showed off the

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PHOTO/JESSICA SCHULTZ

The Hitchcock Center is open, free, to families and the community second Saturdays of the month, through December, from 9 a.m. to 1 p.m. Stop by to explore the building, talk with an educator, read a book with your kids or grandkids in the visitor center, and join one of the family science programs. Nov. 11: Composting Critters, 10 to 11 a.m. Come meet some of the creatures that are busy breaking down the dead stuff out in nature. Dec. 9: Exploring Dinosaurs, 10 to 11 a.m. Explore the different groups of dinosaurs and learn which ones lived right here in the Pioneer Valley.

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## GOING GREEN NOTEBOOK

### Greater Quabbin Food Alliance Winter Gathering

ORANGE — Dec. 5, 8:30 a.m. to 1 p.m., at the Orange Innovation Center, 131 West Main St. Connect, network and work together on issues impacting local farmers, health, food access and economic development. Ongoing projects include regional efforts to get more local food served at institutions, jumpstart food businesses in our area, protect farmland, and support area farmers. Want to share a project you are working on? Consider giving a 5-minute "Lightning Talk" at the gathering. Contact Kat Kowalski at 978-248-2055, ext. 29, if interested.

### 2018 NOFA/Mass Winter Conference

WORCESTER — Jan. 13 at Worcester State University. Day-long conference features a variety of workshops on many aspects of regenerative organic growing, food systems policy and land management for growers and organizers of all scales. This year's theme is Cover, Diversity, Regenerate. In addition to the science and practice of building soil life, there will be workshops on raising healthy livestock, high-production gardening, encouraging beneficial insect populations, growing and marketing nutrient-dense crops and more. To submit your own workshop proposal, call 598-360-0874.

[www.nofamass.org](http://www.nofamass.org)

## Hitchcock

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center's water treatment system, which draws from a 6,000-foot reservoir on site and uses ultraviolet light rather than chlorine to kill bacteria.

In some instances, the center had to make choices that were less than ideal. For instance, Schultz noted, the carpeting on classroom floors (a must-have, given the large numbers of children who attend programs there) met the Red List requirements but is still problematic, since carpet has a relatively short lifespan compared to other materials. The builders did, however, persuade the carpet manufacturer to take back leftover scraps from the project to be recycled. They also chose a dry-wall company that agreed to take back leftover material.

Local building codes can also be a challenge, added Andrew Solem, an LBC materials consultant with Wright Builders. For example, code regulations require that pipes be made of plastic or copper. The Hitchcock Center opted for copper — a better option than plastic, which contains PVC (a Red List no-no), but one that still poses environmental problems in its mining.

The Living Building Challenge, McCusker noted, acknowledges that sometimes it might be impossible to find a necessary material that meets its standards. In such cases, the LBC requires builders to call at least three manufacturers to find one

that meets the standards; if none can be found, the builders can go with an alternative, but they must also ask the manufacturers to consider changing their processes to make a more sustainable product. The hope, she said, is that the more builders who call on manufacturers to offer greener products, the more likely manufacturers are to respond. Indeed, Wright noted, manufacturers of building materials are already accommodating calls for greener products; for example, while VOC-free paint was a niche product not long ago, now virtually every paint company offers that option in its line.

Still, there's much to be done. Of the tens of thousands of man-made chemicals on the market, McCusker said, only a tiny fraction have been tested or are regulated. "I'm sure we don't know more than we know," she said. "That's why it's important for consumers to demand transparency."

It's also important, Solem added, for the general public to be educated about the risks posed by many of the building materials used around them, and about the healthier options that are available. To that end, the Hitchcock Center plans more public programs like the "Building without Toxins" events, including tours of its building on the first Friday of each month at 4 p.m., and on the third Wednesdays of the month at noon. A full schedule of Hitchcock Center programs can be found at [www.hitchcockcenter.org/programs](http://www.hitchcockcenter.org/programs).



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